

REMARKS

Claims 1 and 3-31 are all the claims pending in the application. Claim 1 has been amended. Support for the amendment to claim 1 can be found in the specification, such as in Figure 1. Therefore no new matter has been added.

I. Patentability under 35 U.S.C. § 102

Claims 1, 3 and 4 have been rejected under 35 U.S.C. 102(b) as allegedly being anticipated by US Patent Number 5,986,857 to Hirano *et al.* (“Hirano ‘857”).

Claim 1 presently recites that a diamond-like carbon film is provided directly on the substrate.

In contrast, Figure 1 of Hirano ‘857 provides a cross sectional view of a thin film magnetic head of Hirano ‘857. *See* col. 5, lines 52-53. In downwards order, the magnetic head includes

Upper gap insulative layer	59
Second interlayer	58
Electrode	57
MR element	56
Lower gap insulative layer	55
First interlayer	54
Lower shielding layer	53
Insulative layer	52
Al ₂ O ₃ TiC Substrate	51

See col. 6, lines 22-53. Hirano ‘857 discloses that lower gap insulative layer 55 and upper gap insulative layer 59 may include a diamond-like carbon (“DLC”) film. *Id.* The lower gap insulative layer 55 and upper gap insulative layer 59 are not provided directly on the Al₂O₃ TiC

Substrate 51. In this regard, Hirano ‘857 fails to describe or suggest that a DLC film is provided directly on the substrate.

II. Patentability under 35 U.S.C. § 103

The Office Action includes the following § 103 rejections:

Claims 5-7, 11-21 and 24-31 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hirano ‘857, in view of US Patent Number 5,901,021 to Hirano *et al.* (“Hirano ‘021”);

Claims 8 and 9 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hirano ‘857, in view of Hirano ‘021, in further view of US Patent Number 5,764,453 to Postma *et al.* (“Postma ‘453”);

Claims 10 and 23 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hirano ‘857, in view of Hirano ‘021, in further view of US Publication Number 2003/0214745 to Lau (“Lau ‘745”), in even further view of US Patent Number 6,144,534 to Xue *et al.* (“Xue ‘534”); and

Claim 22 has been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hirano ‘857, in view of Hirano ‘021, in further view of US Patent Number 6,326,092 to Ikarashi *et al.* (“Ikarashi ‘092”).

As noted, Hirano ‘857 is deficient in that it fails to teach providing a DLC film on the surface of the substrate thereof. Hirano ‘021 is relied upon to make up for this deficiency.

Figure 6 of Hirano ‘021 discloses a multi-layer structure including as follows:

diamond-like carbon coating	54
SiO ₂	53
diamond-like carbon coating	52
SiO ₂	51
AlTiC substrate	50

Accordingly, Hirano ‘021 teaches that a SiO₂ layer 51 is provided on a substrate.

The multilayer structure disclosed in Hirano ‘021 fails to make up for the deficiencies of Hirano ‘857. Hirano ‘857 discloses that an insulating layer 52 is provided on a substrate. Hirano ‘021 teaches that a SiO₂ layer is provided on a substrate. In this regard, both Hirano ‘857 and Hirano ‘021 fail to teach or suggest providing a diamond-like carbon coating on a substrate. In fact, Hirano ‘021 teaches away from eliminating the SiO₂ layer 51, as it teaches that the SiO₂ layers provide for superior adhesion properties with the substrate. *See* col. 9, line 63 to col. 10, line 3.

Further, Postma ‘453 is relied upon for disclosing a substrate formed from magnetically permeable material. In this regard, Potsma ‘453 fails to make up for the deficiencies of Hirano ‘857 in view of Hirano ‘021.

Lau ‘745 is relied upon for disclosing a certain magnetoresistive element. Lau ‘745 fails to make up for the deficiencies of Hirano ‘857 in view of Hirano ‘021.

Xue ‘534 is relied upon for disclosing that an SAL layer can be a layer of Nickel-iron-niobium (NiFeNb). *See* col. 4, line 64 to col. 5, line 5. In this regard, Xue ‘534 fails to make up for the deficiencies of Hirano ‘857 in view of Hirano ‘021.

Ikarashi ‘092 is relied upon for disclosing a lower gap layer of a magnetic alloy such as Sendust (Fe-Al-Si) and an upper gap layer of a non magnetic material such as Al₂O₃. In this regard, Ikarashi ‘092 fails to make up for the deficiencies of Hirano ‘857 in view of Hirano ‘021.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

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Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Ken Sakurabayashi
Registration No. 58,490

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
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